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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,604	11/14/2003	Morito Morishima	2552-000058	2514
27572 7590 12/20/2007 HARNESSE, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER WRIGHT, KAINOA	
			ART UNIT 2861	PAPER NUMBER
			MAIL DATE 12/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/713,604	Applicant(s) MORISHIMA, MORITO	
	Examiner Kainoa BK Wright	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed 21 September 2007 is hereby acknowledged.

Response to Arguments

2. Applicant's arguments filed 21 September 2007 have been fully considered but they are not persuasive and furthermore are moot in view of the new grounds of rejection.

Applicant argues that the examiner cited prior art fails to teach inscribing a diffraction grating onto an optical disc in order to produce a holographic visual effect.

The examiner points out that such limitations are enabled by the present amendment and were not elements of the original claims.

Applicant argues that Arai and Vincent are drawn to a different technical field from Shin, and thusly are not combinable with Shin.

The examiner disagrees. Arai and Vincent are both drawn towards image formation via laser exposure and are of the same technical field as Shin. This is also the same technical field as the present invention, as the inventive step contained therein relates to laser inscribing a holographic image on a disk. Because of this, all arts having a controlled laser exposure for the purpose of forming an image (i.e. laser printing) are considered relevant art.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (US 5498509) in view of Mueller et al. (US 6,309,727), Arai et al. (US 5,587,772) and Vincent (US 6,069,645).

Regarding Claims 4-5: Shin teaches an optical disk recording device for recording an image on an optical disk by irradiating the disk with a laser according to data from a data source 16 thru the use of a controller 17. Shin further teaches the image formed as a pit array 22 (Fig.6).

Shin fails to teach a storing unit for storing laser information indicating an irradiation interval and a light intensity to be applied to the disk according to a formation spacing to produce the pits having the same length and being formed at a constant interval. Shin further fails to teach a diffraction grating that produces a holographic image being formed.

Mueller teaches pit formation in optical disks such that a holographic image is produced via reflection interference patterns caused by the pits (i.e. a diffraction grating) (col.1, ll.35-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shin to include the teachings of Mueller in order to produce a holographic image by pit inscription.

Arai teaches a storing unit 31 for storing laser information indicating an irradiation interval (i.e. time between irradiation pulses or pulse width) to be applied to a

recording medium according to a formation spacing (i.e. resolution or spacing between dots) when the dots have the same length (i.e. spot size) and are formed at a constant interval (i.e. spacing between dots or resolution) (Fig.6 & col.7, ll.11-67). The dots having the same length and being formed at a constant interval corresponds to a situation where there is no switch in desired formation spacing (Fig.6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the optical disk image writing apparatus of Shin to include the teachings of Arai in order to be able to image according to different pit spacing and thus achieve different holographic effects.

Vincent teaches a storing unit for storing laser information indicating an intensity level of laser light to be applied to a recording medium according to a desired dot size (col.4, ll.28-47); a desired spot size directly effecting a formation spacing (i.e. a spacing between dots or resolution), because a change in spot size necessarily affects the boundaries of adjacent spots, as is known in the art of etching a substrate (i.e. a disk).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the optical disk image writing apparatus of Shin to include the teachings of Vincent in order to define a beam spot size for a desired pit spacing, pit spacing affecting holographic images.

Regarding Claim 3: Shin further fails to teach step-wisely changing at least one of length and formation spacing of the dots by changing the irradiation timing.

Arai further teaches step-wisely changing at least one of length and formation spacing of the dots by changing the irradiation timing (Fig.6). The changing of length

and formation spacing corresponding to a situation where there is a switch in desired formation spacing (i.e. resolution).

Motivation follows from claims 4-5 above.

Regarding Claim 1: The method of claim 1 corresponds to the operation of the apparatus of claim 5 and the art applied towards claim 5 is analogously applied towards claim 1.

Regarding Claim 2: Shin implies that the process is carried out for each image of a plurality of images to be drawn, as the state of the art shows that a plurality of legible characters (i.e. images) are generally desired (see Hirotsune et al. US 6532034).

Allowable Subject Matter

5. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The combined limitation wherein an optical disk is irradiated by a laser to form a diffraction grating by inscribing pits in the disk so as to produce a holographic image; wherein the irradiation interval of the laser is determined according to a predetermined visible light wavelength and a predetermined viewing angle is considered by the examiner to be not taught by the prior art. Specifically, holographic images on optical disks being produced by pit formed diffraction gratings is known or obvious to one skilled in the art. However, the examiner is unable to find teachings of inscribing the

laser light according to an irradiation interval in order to produce the pits; wherein the irradiation interval is determined according to a desired wavelength and viewing angle of the holographic image being formed by the inscription of the pits.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umeda et al. (US 5,138,604); Ito et al. (US5,608,717); Ohno et al. (US 6,507,557).
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kainoa BK Wright whose telephone number is (571) 272-5102. The examiner can normally be reached on M-F 8:00am - 5:30pm.

Application/Control Number:
10/713,604
Art Unit: 2861


Page 7

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KAI
12/14/07


HAI PHAM
PRIMARY EXAMINER